



U.S. Department of Energy
Office of Civilian Radioactive Waste Management



DOE/NRC Quarterly Management Meeting

Las Vegas, Nevada

November 13, 2003



Agenda
DOE/NRC Quarterly Management Meeting
November 13, 2003
9:00 AM – 3:30 PM (PT)
12:00 Noon – 6:30 PM (ET)

BSC
Room 915
9960 Covington Cross
Las Vegas, Nevada

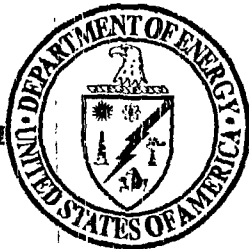
And via Videoconference to:

U. S. Nuclear Regulatory Commission
Two White Flint North, Auditorium
11545 Rockville Pike
Rockville, MD

CNWRA
Bldg. 189, Conference Room B232
6220 Culebra Road
San Antonio, TX

*INTERESTED PARTIES MAY PARTICIPATE VIA TELECON BY CALLING 1-800-638-8081 or
301-231-5539, Passcode 9588#*

9:00 AM	Opening Remarks	All
9:20 AM	NRC Program Update	NRC
9:45 AM	DOE Program Update <ul style="list-style-type: none">• Overview of Program Progress• FY'04 Budget and Schedule Outlook	Chu
10:00 AM	Yucca Mountain Project Update <ul style="list-style-type: none">• Commitments Made in May 29, 2003 DOE Letter• Program Improvement, Metrics, and Effectiveness• Independent Management Assessments	Arthur/Mitchell
11:00 AM	Break	All
11:15 AM	Safety Conscious Work Environment	Arthur
12:15 PM	Lunch	All
1:15 PM	QA Program Update <ul style="list-style-type: none">• QA Meeting Highlights• Corrective Action Program	Brown
2:00 PM	License Application Status	Ziegler
2:45 PM	Break/Caucus	All
3:00 PM	Action Item Status	Gunter
3:15 PM	Closing Remarks	All
3:30 PM	Adjourn	



U.S. Department of Energy
Office of Civilian Radioactive Waste Management



Project Update - Exhibits

Presented to:
DOE/NRC Quarterly Management Meeting

Presented by:
W. John Arthur III
Deputy Director
Office of Civilian Radioactive Waste Management
Office of Repository Development
U.S. Department of Energy

November 13, 2003
Las Vegas, Nevada

Management Assessment of Progress towards License Application

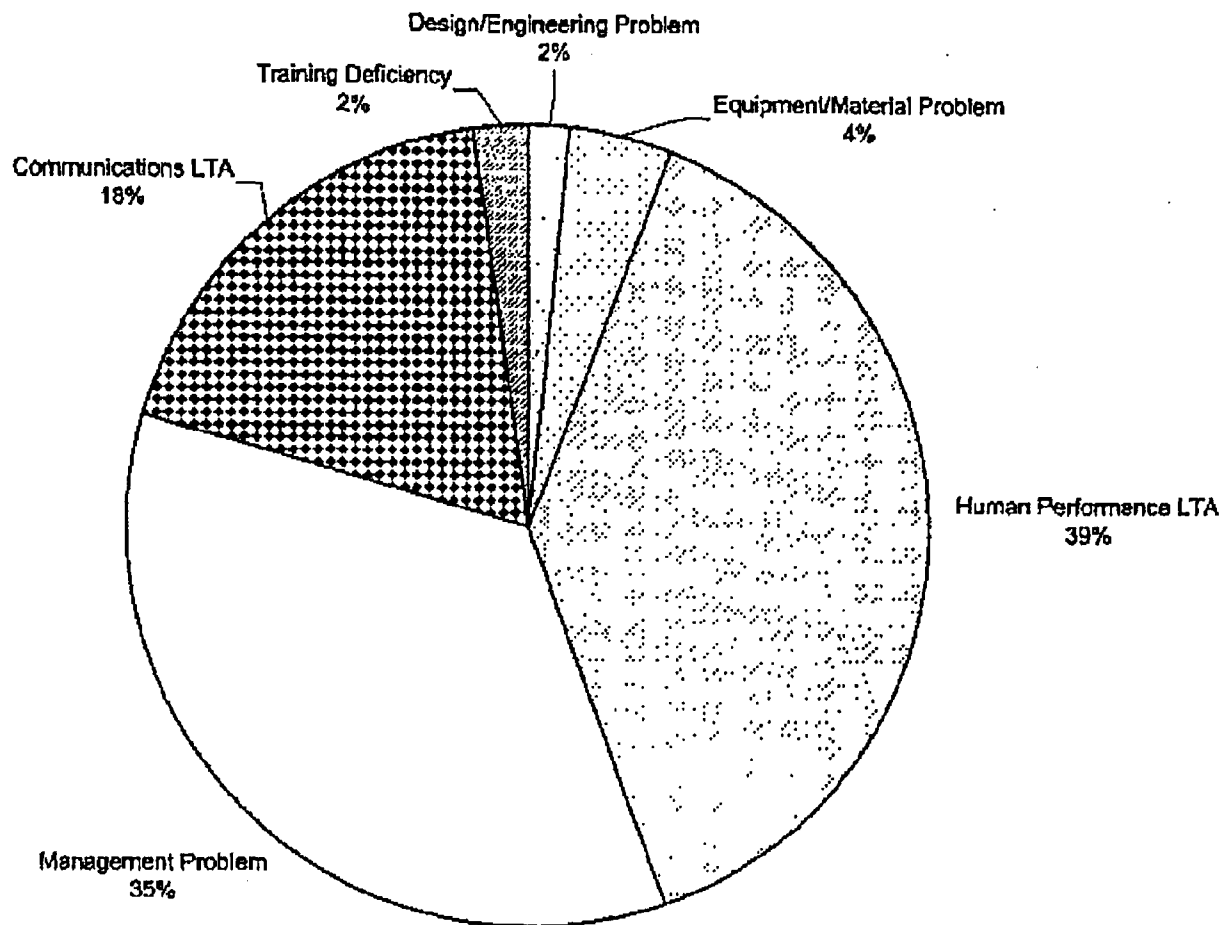
<u>COMPONENT</u>	<u>% COMPLETE</u>	<u>DATE (10/03)</u>
KTI Agreement Closure (10%)	42%	
LA Document (20%)		
Preclosure Safety Assessment (10%)		6
TSPA-LA (30%)	35%	63%
Design (30%)	<u>25%</u>	<u>40%</u>
TOTAL % COMPLETE	25%	42%

- ¹ Based on assumption that at least 65% (190) of 293 agreements will be considered complete by NRC before LA submittal.



Procedural Compliance Trend Report (September 5, 2003)

Distribution of first level (apparent) causes of conditions identified (QARD issues only) in 187 documents evaluated for the period April 1, 2002 through June 30, 2003



LTA = Less than adequate

Status of Priority I Procedure Revisions

- **AP-2.1Q - Indoctrination and Training of Personnel (Effective September 30, 2003)**
- **LP-2.13Q - Establishment and Verification of Required Education and Experience of Personnel (OCRWM) (Target effective date: November 30, 2003)**
- **LP-2.9Q - Establishment and Verification of Required Education and Experience of Personnel (BSC) (Effective October 1, 2003)**
- **AP-SEC-001 - Protection, Distribution, and Use of Sensitive Unclassified Information (Target effective date: TBD)**
- **AP-SV.1Q - Control of the Electronic Management of Information (Effective September 30, 2003)**

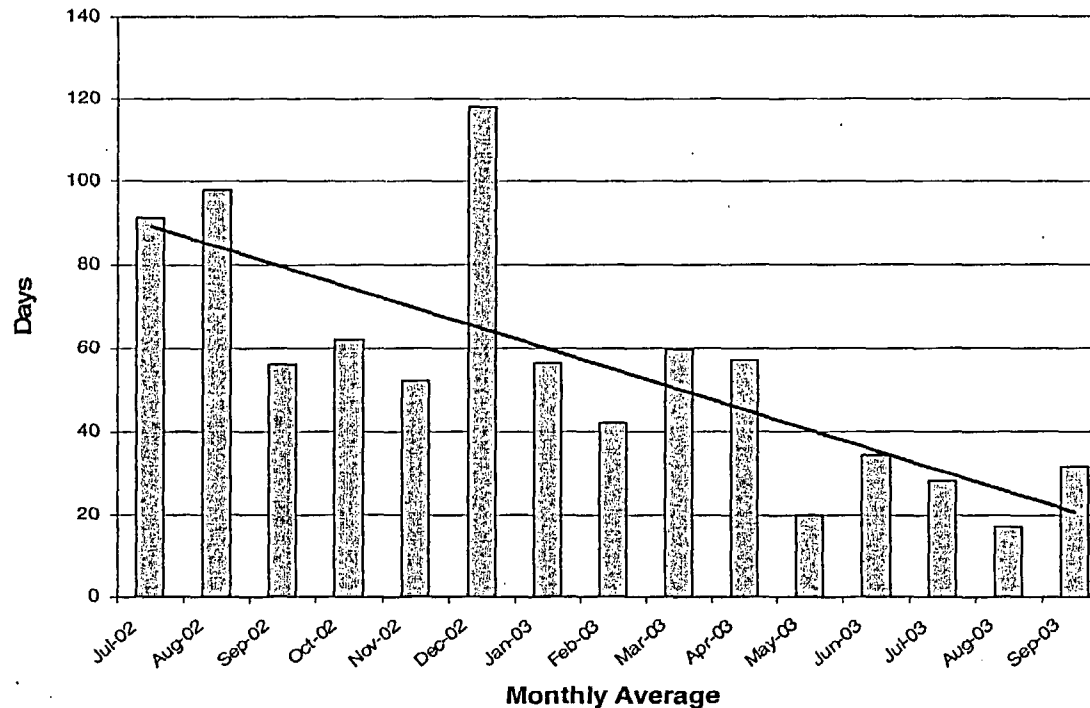


[illegible]

Corrective Action Program Performance Indicators



2.4.3 – (0%) – Causal Analysis & CAP Development



Status: Data relative to goal of preparing and approving 90% of corrective actions within 30 days has not been transferred into new performance indicator format. Performance appears to be improving however indicator 2.3.2.2, Acceptable Corrective Action Plans Developed is red

Impact: Failure to develop corrective action plans in a timely manner can result in work stoppages and excessive rework



Corrective Action Program Performance Indicators

(Continued)

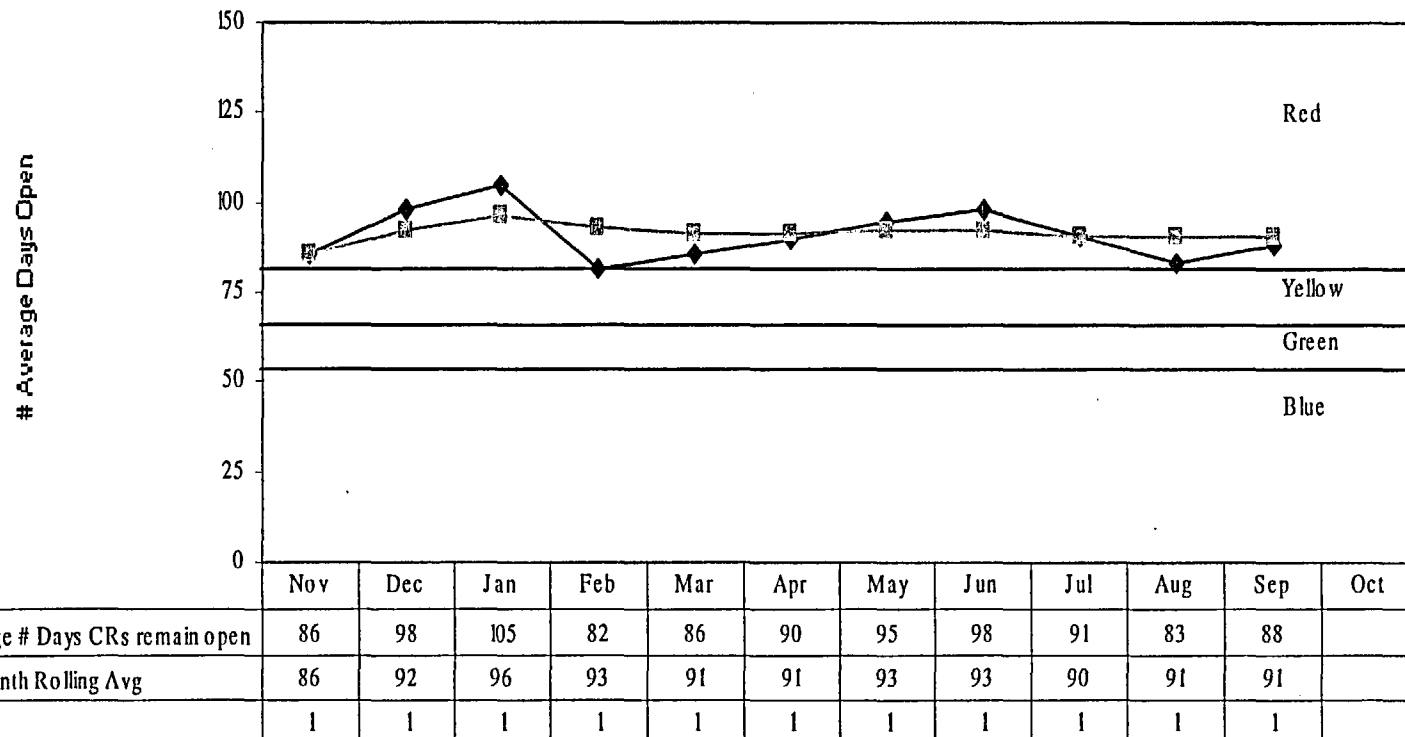


2.4.4 – (90%) - Timely and Effective CAR:

Score: 2.0



2.4.4.1 – (25%) – Adverse Condition Report Average Age



Status: Performance is below acceptable values and is not showing improvement. Continued management emphasis is needed to achieve improvement.

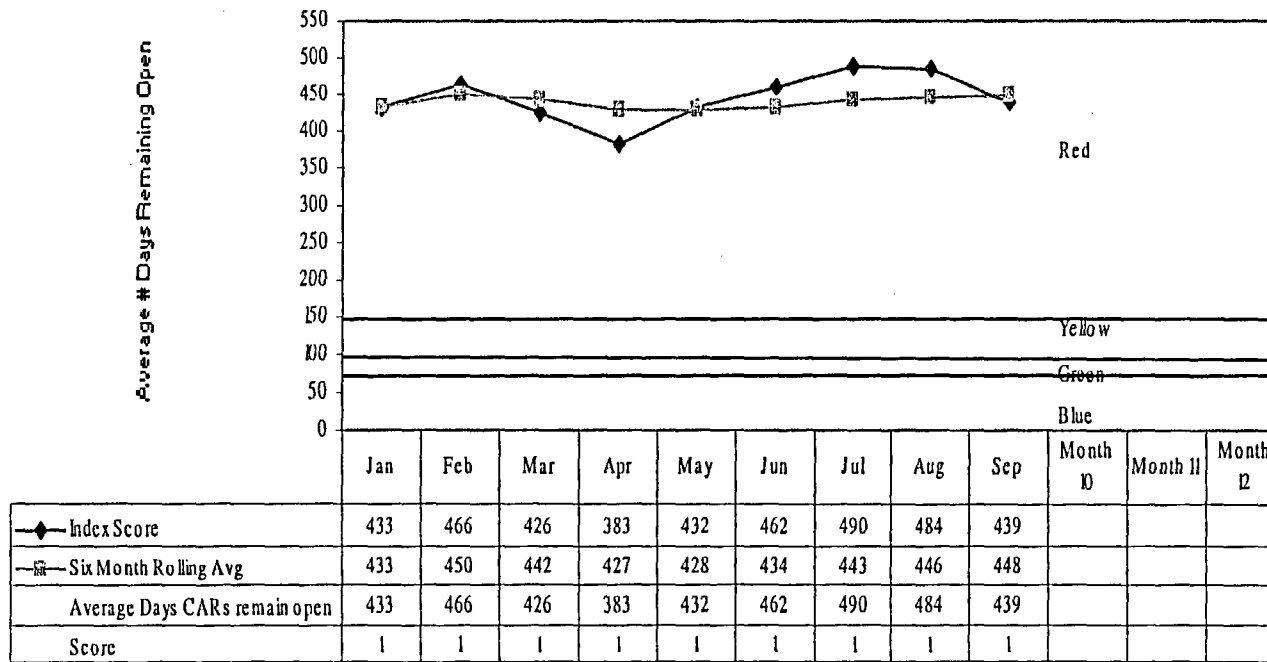
Impact: Failure to implement corrective actions in a timely manner can result in work stoppages and excessive rework.



Corrective Action Program Performance Indicators (Continued)



2.4.4.2 – (25%) – Significant Adverse Condition Report Average Age

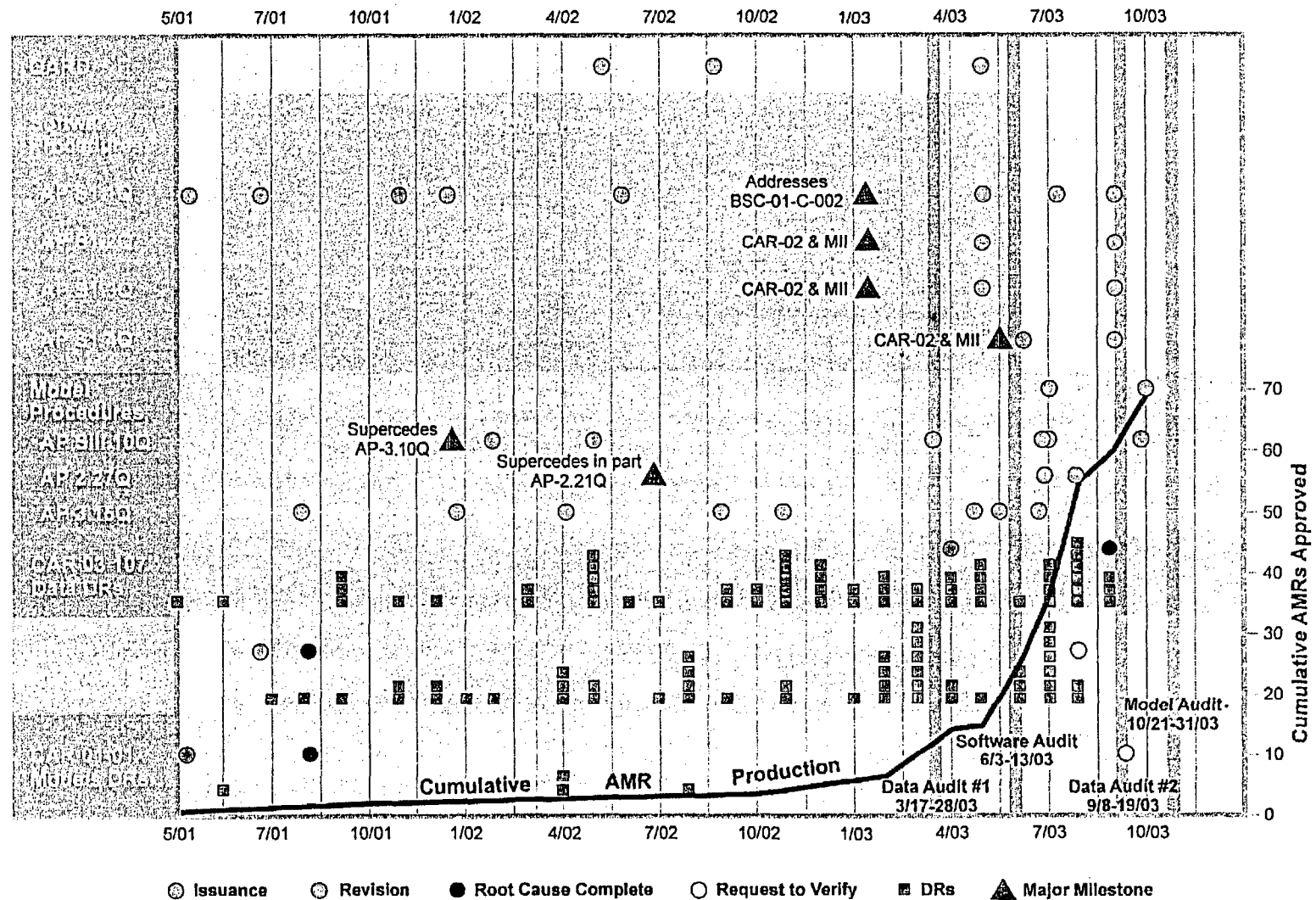


Status: Performance is below acceptable values and is not showing improvement. Resources need to be applied to close the significant Condition Reports such as CAR 001 and 002.

Impact: Failure to implement corrective actions in a timely manner can result in work stoppages and excessive rework.



Factors Affecting AMR Production



00470CDC AMR Timeline - a.ai



YUCCA MOUNTAIN PROJECT

Yucca Mountain Project

Performance Indicators based on September 2003 Data

Primary			Secondary					Focus Area
	5.1 Cross Cutting Indicators	5.1.1 SCWE	6.1.2 Accountability &	5.1.3 Project Quality Focus	5.1.3 Project Schedule & Timeliness	5.1.5 Efficiency and Cost Focus	5.1.8 Stakeholder Confidence	
WORK EXECUTION	Primary							Focus Area
	1.1 Licensing	1.1.1 License Application Development	1.1.2 NRC Interactions	1.1.3 License Support Network Input	1.1.4 NRC Commitments	1.1.6 Key Technical Issues		
	1.2 Engineering/Design	1.2.1 Surface Facilities	1.2.2 Subsurface Facilities	1.2.3 Engineered Barriers	1.2.4 Hostile and Interceptor Management			
	1.3 Safety Analysis	1.3.1 TSPA	1.3.2 Performance Confirmation	1.3.3 Precision Safety Analysis			1.3.3 Open	
	1.4 Site Operations	1.4.1 AMR Production	1.4.2 Data Management	1.4.3 Model Validation	1.4.4 Software Qualification			
		1.4.1 Site Engineering	1.4.2 Site Construction	1.4.3 Site Maintenance	1.4.4 Operations	1.4.5 Backfill Nevada		
MANAGEMENT	Primary							Focus Area
	2.1 Project Support	2.1.1 Project Controls	2.1.2 Security	2.1.3 Information Technology	2.1.6 Emergency Management		2.1.6 Open	
		2.1.4 Procurement	2.1.7 Human Resources	2.1.8 Training	2.1.10 Records Management		2.1.9 Open	
	2.2 Safety and Health	2.2.1 ISM	2.2.2 Occupational Injuries	2.2.3 Safety & Health Assessments	2.2.4 Safety and Health Program Performance		2.2.5 Open	
	2.3 Quality Assurance	2.3.1 Technical Product Compliance	2.3.2 Verification of Project Quality	2.3.4 Quality Program Health			2.3.3 Open	
	2.4 Corrective Action Mgmt Systems	2.4.1 Prevention	2.4.2 Self Reporting Culture	2.4.3 Causal Analysis & CAP Development	2.4.4 Timely & Effective CAP	2.4.5 CAP Performance & Interactions		
	2.5 Management Framework	2.5.1 Procedure Quality	2.5.2 Procedure Revision Frequency	2.5.3 Procedure Compliance	2.5.4 Procedure Development			
	2.6 Environmental Management	2.6.1 Environmental Stewardship	2.6.2 Environmental Permits	2.6.3 Environmental Compliance	2.6.4 Envr. Perm. Performance		2.6.3 Open	
	2.7 Project Management	2.7.1 Cost Performance (Overall CPI)	2.7.2 Schedule Performance (Overall SPI)	2.7.3 Scope Baseline	2.7.4 Risk & Contingency	2.7.6 Key Deliverable Critical Path	2.7.6 Project Financial Management	
	2.8 Organizational Culture	2.8.1 Employee Concerns	2.8.2 Performance Measures	2.8.5 Communication	2.8.6 Process Improvement	2.8.3 Open	2.8.4 Open	
	Primary							Focus Area
	3.1 External	3.1.2 LSH (CAGI)	3.1.5 Funding		3.1.1 Open	3.1.3 Open	3.1.4 Open	

Rating

Matrix Title

Life Cycle Mile

N

Exceptional program, exceeds performance; significant positive impact on overall mission, resources, and impact on the

R

Dependent on adverse performance was using standard level of operational situation, resources, and impact on the

G

Literature performance which meets or exceeds requirements and impact on the overall mission, resources, and impact on the

W

Insufficient data to be used for analysis

I

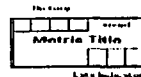
Copy for Line 1: Updated metrics are provided by the data

Y

"Marginal." Yellow can be used to denote areas of concern or areas of improvement, which require more detailed management attention and resources to achieve the level of performance as required by the mission.

M

"Marginal." Yellow can be used to denote areas of concern or areas of improvement, which require more detailed management attention and resources to achieve the level of performance as required by the mission.

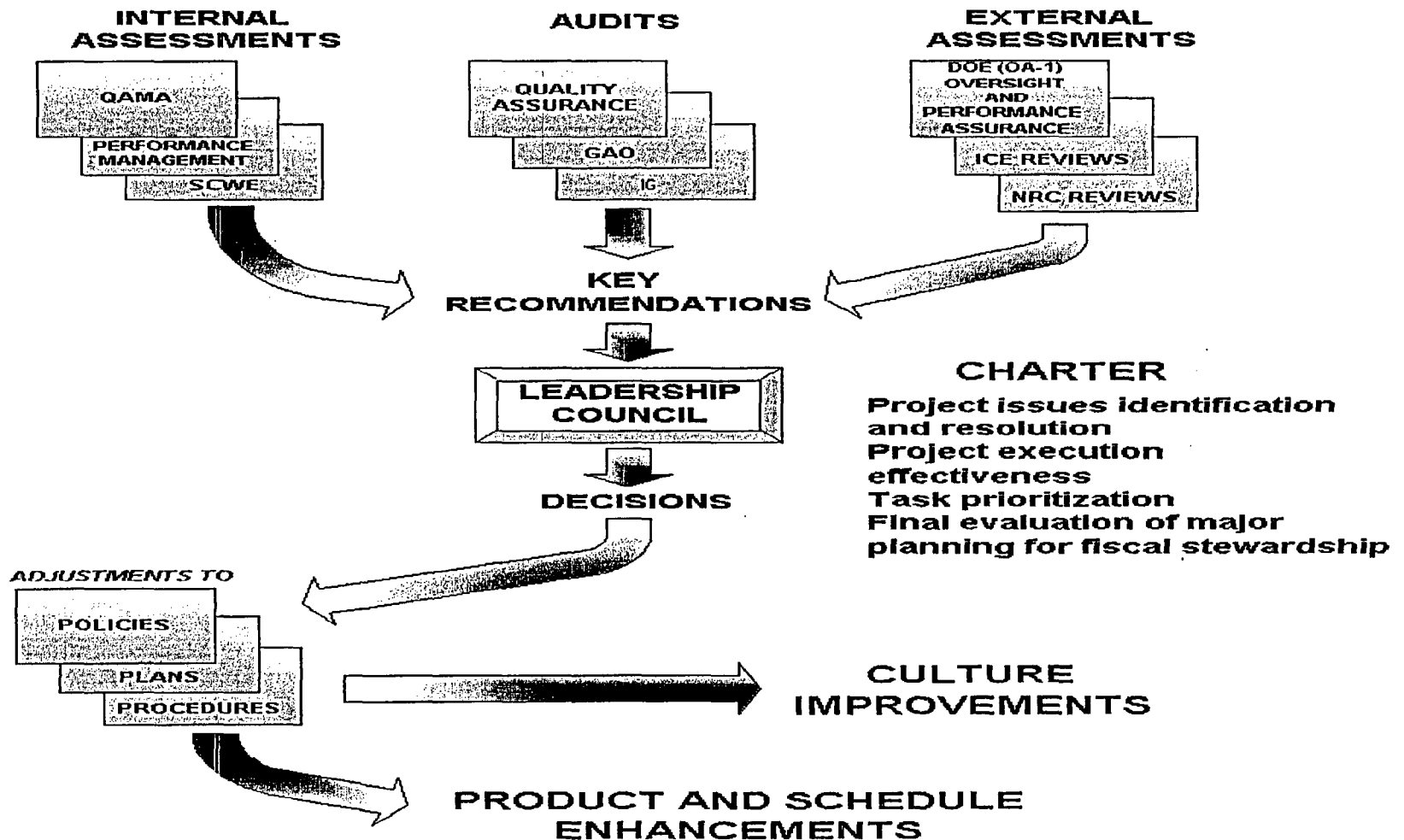


Let's build it

- Key**
- N** Exceptional program, milestone, project, or initiative performance; significantly exceeds expectations
 - R** Degraded or adverse performance was using standard level of management attention, resources, and implementation
 - G** Effective performance which meets or exceeds expectations and expectations; therefore, only a minimum level of management attention or resources is needed
 - W** Insufficient data or not applicable
 - I** Easy for data - updated metrics are provided by the data
 - Y** "Marginal". Follow up may be needed to ensure delivery of new capabilities
 - O** Out of focus or declining performance, which needs more management attention and resources to achieve the desired performance and to create a new trend
 - U** Appropriate performance that falls on a set of thresholds which could change and quickly send performance into the "Red" category. For example, if a score is at the line of a threshold, the chance of a response to the exception or a policy change on the part of a regulator



Leadership Council Model





U.S. Department of Energy
Office of Civilian Radioactive Waste Management



Safety Conscious Work Environment

Presented to:

DOE/NRC Quarterly Management Meeting

Presented by:

W. John Arthur III

Deputy Director

Office of Civilian Radioactive Waste Management

Office of Repository Development

U.S. Department of Energy

November 1994

Las Vegas, Nevada

FOUR PILLARS OF A SAFETY CONSCIOUS WORK ENVIRONMENT

SCWE

MANAGEMENT
SUPPORT



WORKER
CONFIDENCE



RAISE
CONCERNS
WITHOUT
FEAR OF
RETALIATION

EFFECTIVE
NORMAL
PROBLEM
RESOLUTION
PROCESSES

DPO

Differing
Professional
Opinion

CAP

Corrective Action
Process

EFFECTIVE
ALTERNATE
PROBLEM
RESOLUTION
PROCESSES

ECP

Employee
Concern
Process

EFFECTIVE
METHODS TO
DETECT AND
PREVENT
RETALIATION

SCWE

Review Process

BASIC PRINCIPLES

- Treat everyone with respect
- Focus on the situation, not the person
- Seek first to understand
- Take initiative to make things better
- Lead by example



YUCCA MOUNTAIN PROJECT

Safety Conscious Work Environment

- **Safety Conscious Work Environment (SCWE) Accomplishments**
 - **Office of Repository Development (ORD) and Bechtel SAIC (BSC) Prudency Boards operational**
 - **Conducted training for Senior Managers on Detection and Prevention of Retaliation**
 - **Retained SCWE Experts (ORD and BSC)**
 - **Designated Senior SCWE Office of Civilian Radioactive Waste Management (OCRWM) Sponsor**
 - **Defined agenda item at recent OCRWM off-site meeting**
 - **Implemented new Corrective Action Program**
 - **Posted OCRWM Concerns Program Manager Position**
 - **Conducted Independent Survey**



YUCCA MOUNTAIN PROJECT

Safety Conscious Work Environment

(Continued)

- **Independent Survey**

- **International Survey Research (ISR)**

- ♦ **Organizational research firm with 30 years experience**
 - » **Surveyed over 2,600 companies and 38 million employees and managers**
 - ♦ **U.S. Industry Cross-Section Comparisons (U.S. National Norm)**
 - » **Approximately 200 companies and over 300,000 employees**
 - ♦ **U.S. Government Research and Technology Norm**
 - » **DOE National Laboratories**
 - » **U.S. Naval Warfare Centers**
 - » **U.S. Nuclear Regulatory Commission**

- **Dr. Leo Brajkovich – Executive Director, ISR**



Office of Civilian Radioactive Waste Management

OCRWM

2003 Safety Conscious Work Environment Survey

Follows:



Office of Civilian Radioactive Waste Management

OCRWM

2003 Safety Conscious Work Environment Survey

Administration: August 18 through September 5

Outgoing	Returned	Return Rate	Margin of Error
2,287	1,492	65%	+/- 1.5%



YUCCA MOUNTAIN PROJECT

OCRWM 2003 SCWE Survey Design and Development

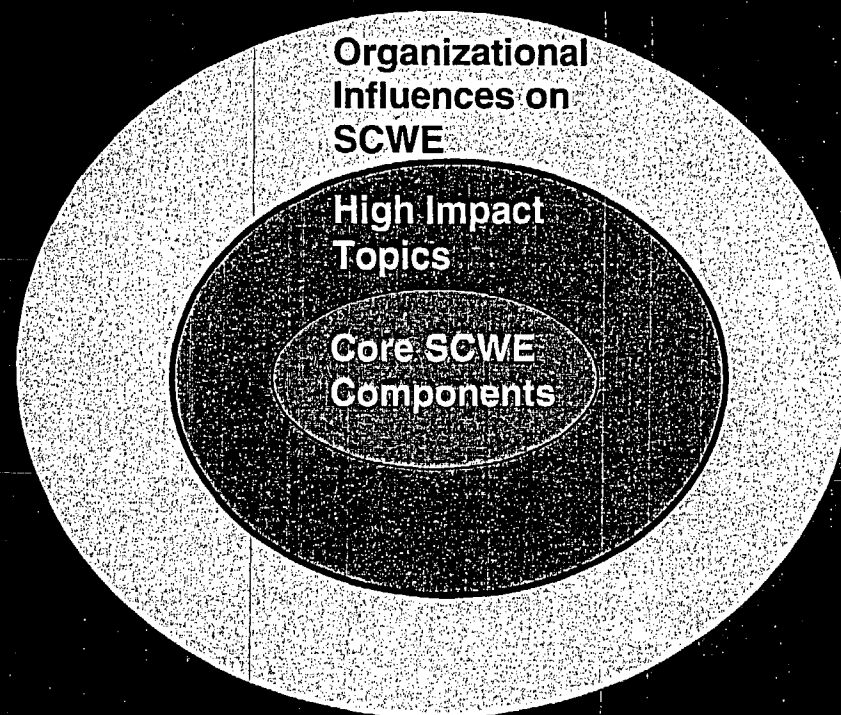
- Review of NEI, NRC, DOE and other agency documents and policy on SCWE and its core principles
- Interviews with DOE, BSC, Labs and Contractor personnel on existing SCWE plans, programs, and their experiences
- Pretest of draft survey with small sample of OCRWM employees
- Inclusion of normative questions from ISR's database of questions allowing comparisons to outside organizational benchmarks

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SCWE Survey Measurement Framework



Goal: Measuring SCWE, its influences and what drives its improvement.

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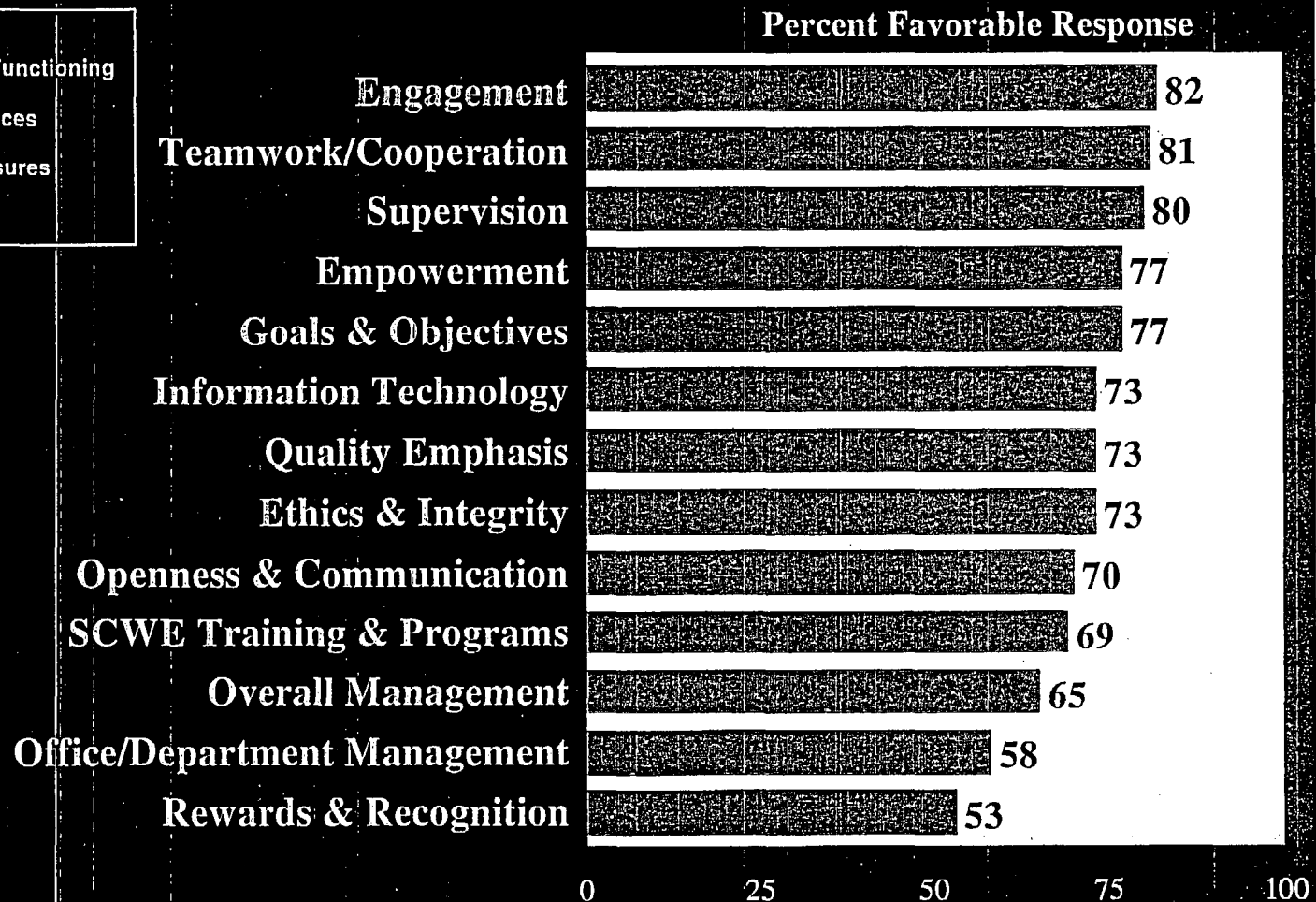
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OCRWM 2003 Safety Conscious Work Environment Survey (N=1,492)

Legend:

-  Organization Functioning
-  Work Experiences
-  Outcome Measures
-  SCWE



OCRWM

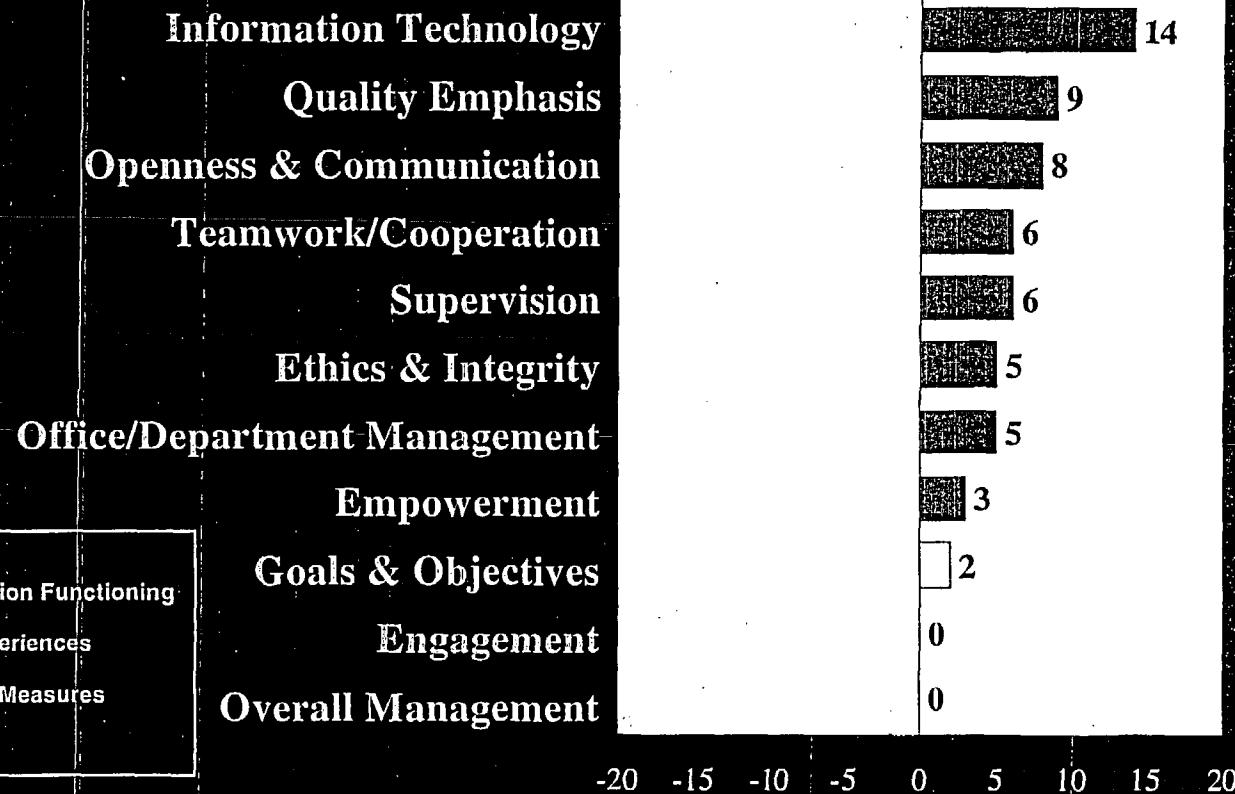
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OCRWM 2003 (N=1,492) Compared with U.S. National Norm

Center Line:
U.S. National Norm (N=159,436)



Legend:

- Organization Functioning
- Work Experiences
- Outcome Measures
- SCWE

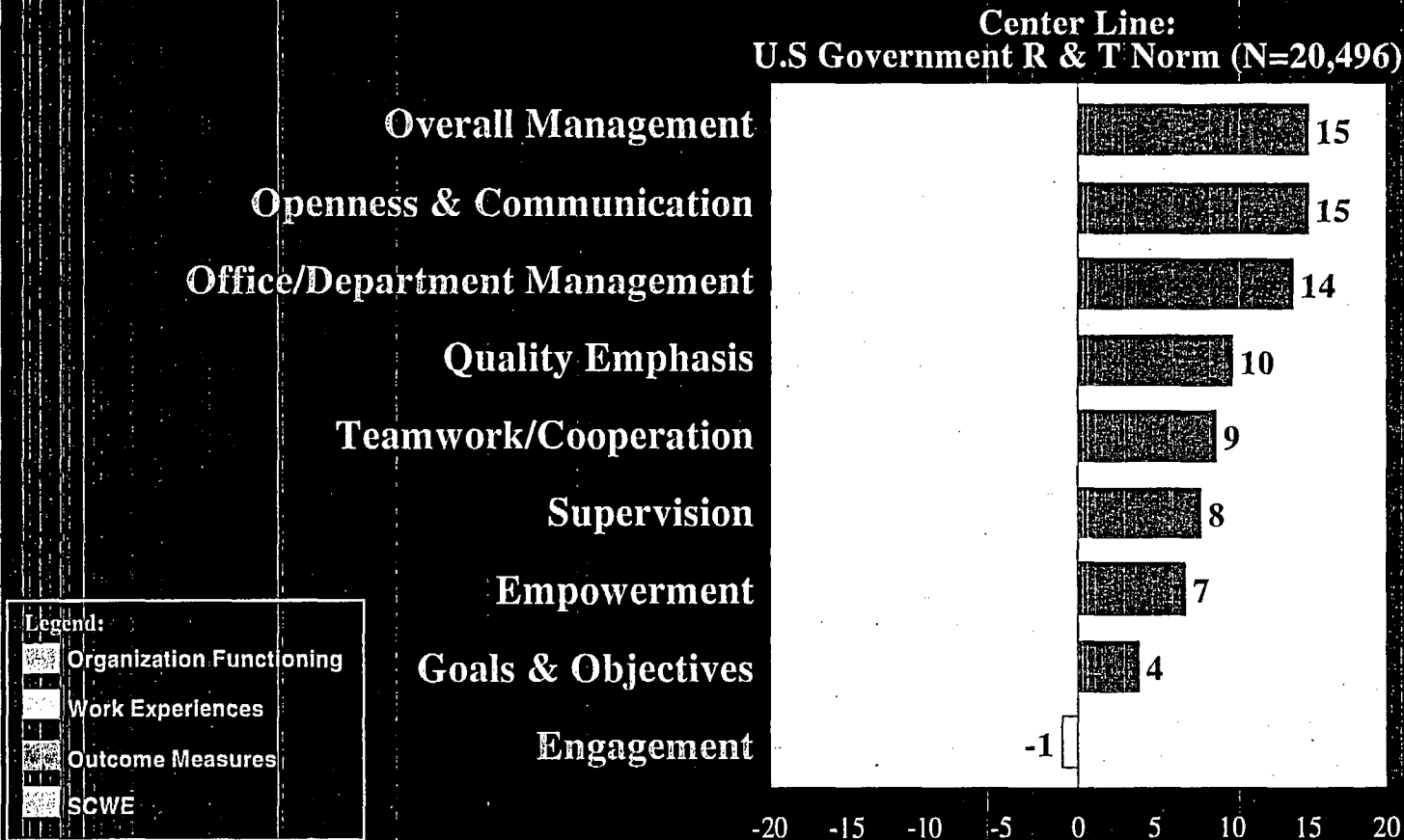
OCRWM

Colored bars indicate a statistically significant difference

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OCRWM 2003 (N=1,492) Compared with U.S. Government Research & Technology Norm



OCRWM

Colored bars indicate a statistically significant difference.

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**OCRWM Overall (N=1,492) Items With the *Most Favorable*
Results Compared with U.S. National (Nat'l) and U.S.
Government Research & Technology (GRT) Norms**

Category	Item	OCRWM % Fav.	▲ Nat'l	▲ U.S. GRT
Quality Emphasis	31a. My organization too often sacrifices the quality of our products/services in order to: Cut costs (N)	70	22*	19*
Information Technology	4e. Our Information Technology systems: Are sufficiently integrated across my organization for my needs	67	21*	NA
Openness & Communication	27. If I were dissatisfied with my supervisor's decision on an important matter, I would feel free to go to someone higher in authority.	69	18*	NA
Openness & Communication	35. Most of the time it is safe to speak up in my organization.	78	18*	20*
Quality Emphasis	31b. My organization too often sacrifices the quality of our products/services in order to: Meet schedules/deadlines (N)	57	15*	14*

*A statistically significant difference.
(N) Disagreeing is the Favorable Response.

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OCRWM Overall (N=1,492) Items With the Most Favorable Results Compared with U.S. National (Nat'l) and U.S. Government Research & Technology (GRT) Norms

Category	Item	OCRWM % Fav.	▲ Nat'l	▲ U.S. GRT
Information Technology	4d. Our Information Technology systems: Are being implemented quickly enough to meet business needs	61	15*	NA
Openness & Communication	17. Differing opinions are openly discussed in reaching decisions in my work group.	79	12*	NA
Openness & Communication	5a. My organization has established a climate where: People can challenge our traditional ways of doing things	67	12*	21*
Teamwork/ Cooperation	37b. In my organization, teamwork is: Given recognition	68	11*	NA
Overall Management	49. The management style in my organization encourages employees to do their best.	75	11*	25*

* A statistically significant difference.

OCRWM

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OCRWM Overall (N=1,492) Items With the Results Compared with U.S. National (Nat'l) and U.S. Government Research & Technology (GRT) Norms

Category	Item	OCRWM % Fav.	▲ Nat'l	▲ U.S. GRT
Overall Management	25b. Recent reorganizations have been well: Communicated	36	-16*	NA
Goals & Objectives	2. Priorities or work objectives are changed so frequently I have trouble getting my work done.	44	-11*	-11*
Overall Management	25a. Recent reorganizations have been well: Planned	36	-10*	NA
Engagement	11. I would recommend my organization as a good place to work.	66	-6*	9*
Openness & Communication	43b. I am sufficiently informed about my Organization's performance.	56	-4*	11

OCRWM

* A statistically significant difference.

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OCRWM Overall (N=1,492) Items With the *Most favorable* Results Compared with U.S. National (Nat'l) and U.S. Government Research & Technology (GRT) Norms

Category	Item	OCRWM % Fav.	▲ Nat'l	▲ U.S. GRT
Overall Management	14. There is sufficient contact between management above my supervisor and employees in my organization.	56	-4*	11*
Empowerment	9. I have sufficient authority to do my job well.	77	-4*	-1
Supervision	36. My supervisor has sufficient authority.	74	-4*	NA
Engagement	22. I am proud to be associated with my organization.	81	-2*	-1
Goals & Objectives	26. I have a very clear idea of my job responsibilities.	86	-2*	-3*

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* A statistically significant difference.

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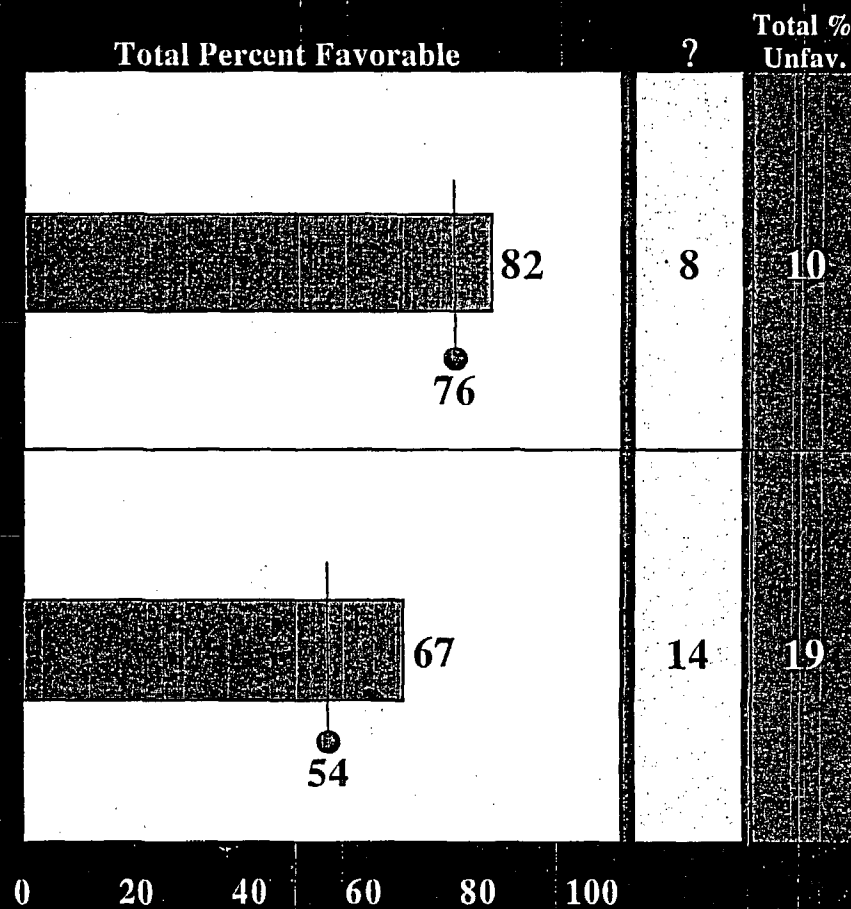
OCRWM Overall 2003 (N=1,492)

Yucca Mountain Project Pulse - June 2003

Overall Management

34. I believe that my management chain adheres to a Safety Conscious Work Environment.

64. I believe that if my management made a non-conservative decision, I could challenge that decision.



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 OCRWM Overall 2003 (N=1,492)
 Yucca Mountain Project Pulse - June 2003

24. I feel free to approach the following levels of management regarding any concern:

Supervision

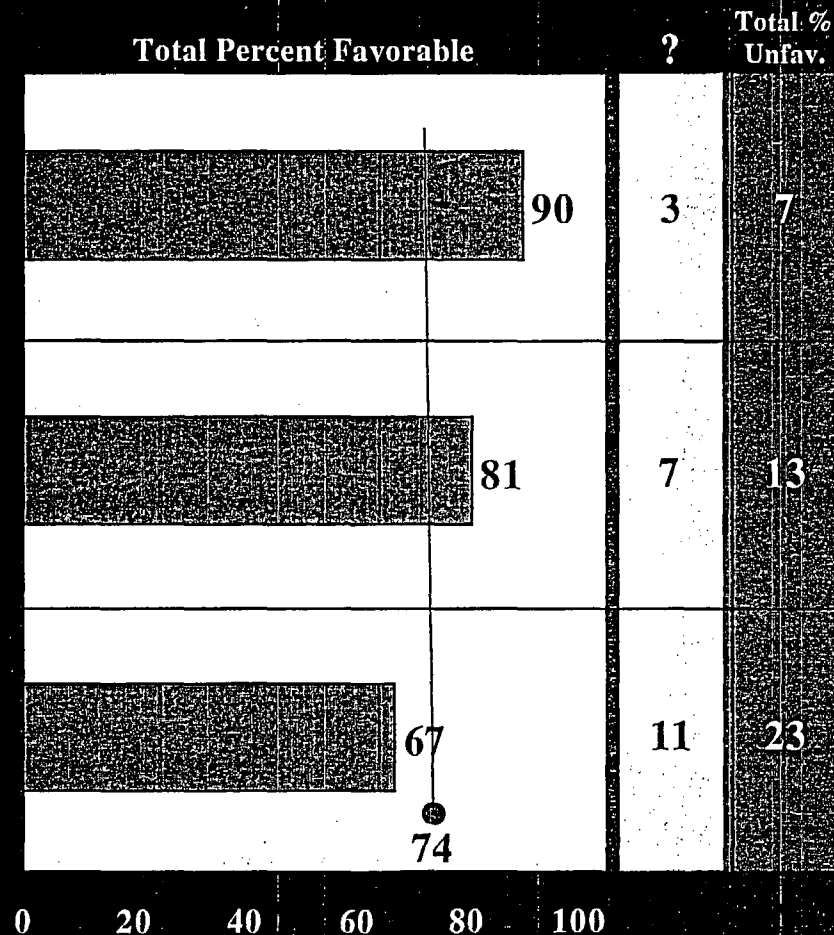
a. My supervisor

Office/Department Management

b. My office/department manager

Overall Management

c. My organization's management



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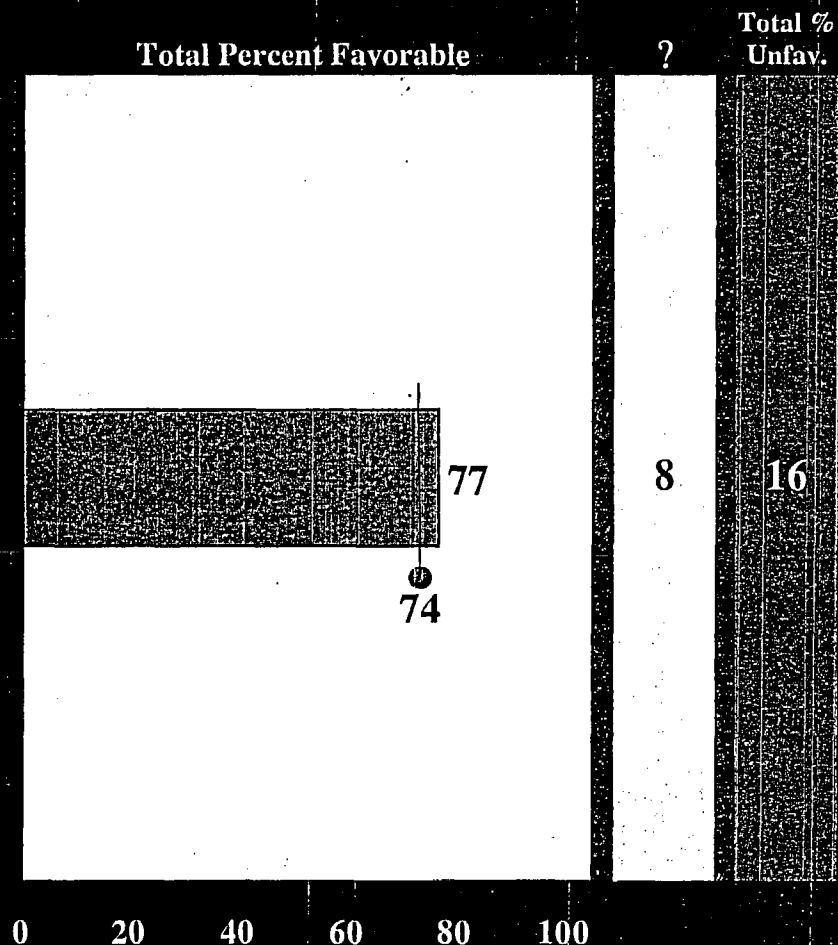


OCRWM Overall 2003 (N=1,492)

Yucca Mountain Project Pulse - June 2003

Openness & Communication

50. I believe I can raise any concern (e.g., nuclear safety, radiological safety, industrial safety, or quality) without fear of reprisal.



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* A statistically significant difference.

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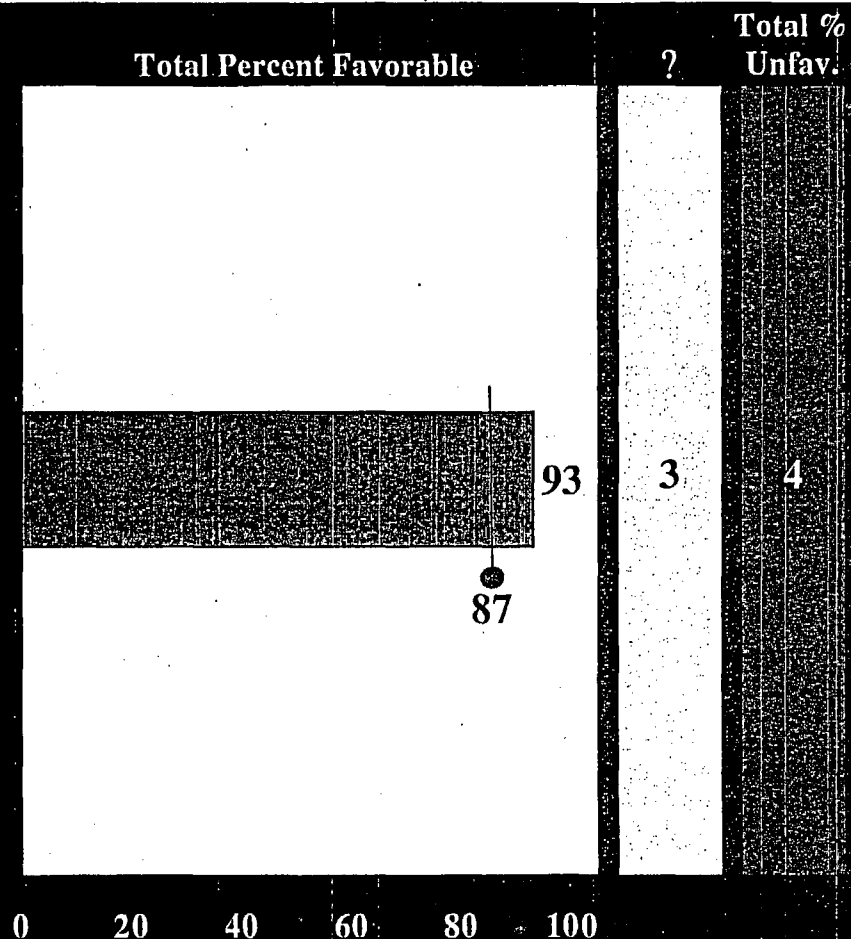
OCRWM Overall 2003 (N=1,492)



Yucca Mountain Project Pulse - June 2003

SCWE Training & Programs

48. I know how to submit a concern or who to contact for my organization's Employee Concerns Program.



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CREATING "SCWE IMPACT INDEX"

- SCWE Impact Index is a targeted set of items designed to measure core concepts related to SCWE.
- The index was initially constructed based on principles of SCWE and prior research.
- Statistical analysis identified most supportive and influential concepts:
 - Potential additions to the index for ongoing spot or pulse measurement of SCWE.
 - Areas with highest potential impact on SCWE for action planning.

Common Key Drivers of SCWE Impact Index

- 55. My organization's management provides a clear sense of direction. (1, 5)
- 61. I believe I can raise any concern, [e.g., procedural compliance, effectiveness of process] without fear of reprisal. (1, 4)
- 58b. In my organization, quality improvement is viewed as a long-term commitment, not to be compromised by short-term financial goals. (1, 2)
- 30. Based on my most recent experiences, my organization's management trusts the judgment of people at my level in the organization. (1, 2)
- 16b. My organization operates with integrity in its external dealings. (2, 5)
- 34. I believe that my management chain adheres to a Safety Conscious Work Environment. (3, 4)
- 20. I am satisfied with my involvement in decisions that affect my work. (5, 6)

**Total Variance in SCWE Impact
Index Explained: 52-82%**

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Most Prevalent Comment Topics

Question: What specific suggestions do you have for improving the safety conscious work environment (SCWE) in your group?

475 of 1,492 Employees (31.8%) made comments

Communication
(N=154)

32.4

Management
(N=137)

28.8

Quality
(N=75)

15.8

0 10 20 30 40

Percent of Employees Commenting

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Representative Comments by Theme

Communication (N=154, 32.4% of comments) *Main themes: Need open and honest communication and effective communication channels*

- "I feel that my own work group is on the right track, because of my immediate supervisor's positive attitude and open communication/management style. (And I do equate good management with good OPEN communication, and vice versa.)"
- "Find better ways of communicating SCWE results at the working level (the published Survey Results are helpful in terms of attitudes/impressions). There is an overuse of 'canned' communications material."

Management (N=137, 28.8% of comments) *Main themes: Need accountability and openness to diverse perspectives*

- "Ensure that all management, including senior management, follows the rules and requirements of OCRWM. That includes wearing of badges and attending required training."
- "Management needs to establish the standard and the consequences of not meeting that standard, then hold everyone visibly accountable to the standard. That needs to be done even if they have to let someone go, including a senior manager, that does not meet the standard."

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Representative Comments by Theme

Quality (N=75, 15.8% of comments) *Main themes: Need to reconcile schedule with quality requirements, impact of change on quality of work*

- "OCRWM appears to be putting out mixed signals by holding to a schedule that requires quality to be compromised in order to meet it. But yet, OCRWM says they are committed to quality. It is unclear whether OCRWM management is getting the true story regarding project status."
- "I truly believe that Management at all levels is serious about implementing an effective SCWE program, including the necessity for quality work meeting/exceeding quality requirements. The difficulty at lower levels is found in understanding and implementing the never ending changes in programs and requirements."

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Results Summary

Strengths to Maintain:

- Emphasizing Quality
- Setting and Communicating Goals & Direction
- Encouraging Openness & Receptiveness to Input
- Building Trust and Maintaining Integrity
- Involving Employees in Decisions
- Keeping SCWE as a Priority
- Encouraging & Recognizing Team Work

Areas for Improvement:

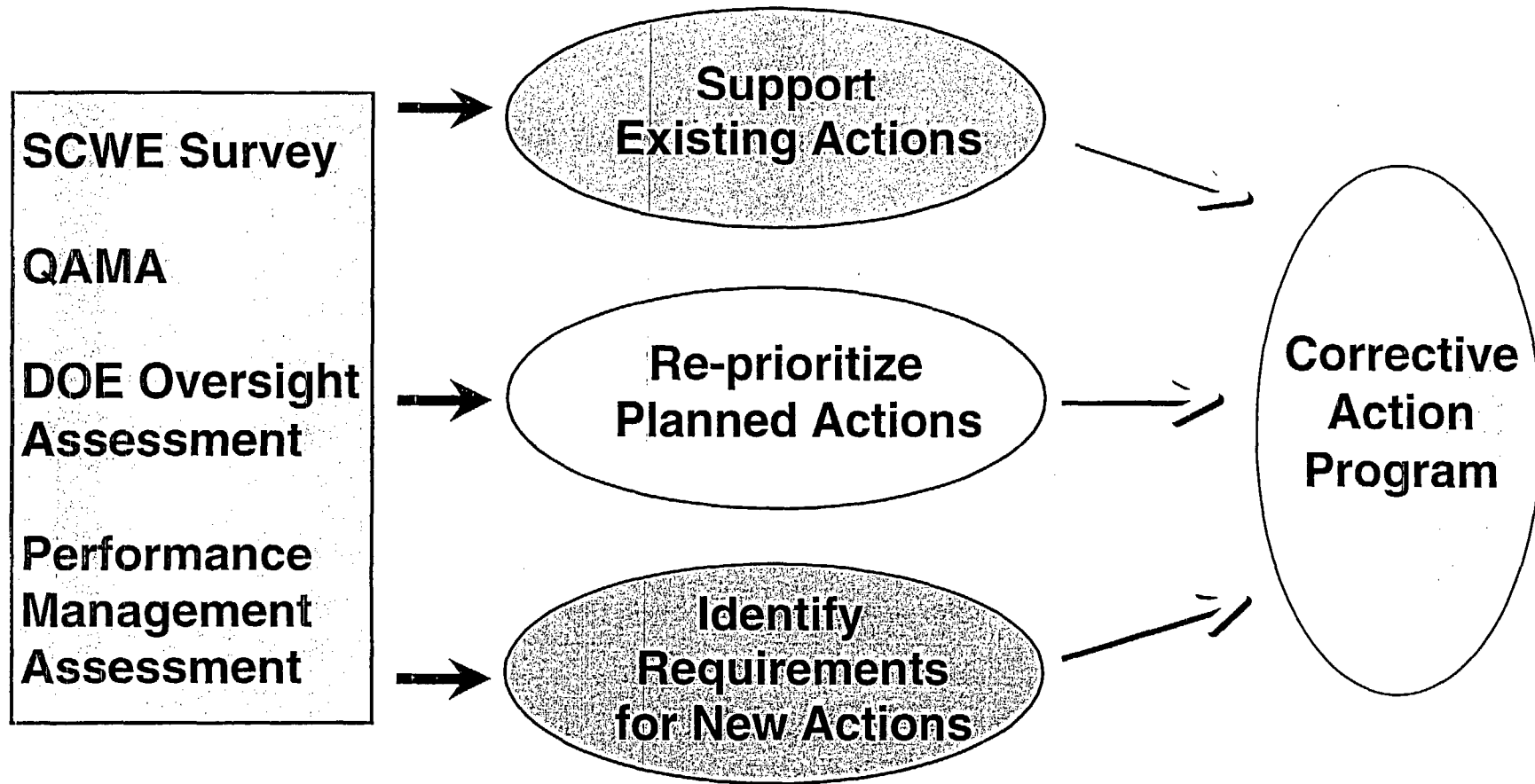
- Managing Change
 - Planning & Communication of Reorganizations
 - Setting Objectives and Priorities
 - Keeping Quality Focus
- Communicating Organizational Performance
- Ensure Sufficient Authority Levels
- Perceived Effectiveness of CAP

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Integrated Action Planning





U.S. Department of Energy
Office of Civilian Radioactive Waste Management



Quality Assurance Program

Presented to:
DOE/NRC Quarterly Management Meeting

Presented by
R. Dennis Brown
Director, Office of Quality Assurance
Office of Civilian Radioactive Waste Management
U.S. Department of Energy

November 2003

Las Vegas, Nevada

Quality Assurance Program

- **Improvements completed (September 30)**
 - **Corrective Action Program**
 - ♦ Single entry point process implemented
 - ♦ Condition Report, Nonconformance Report, Technical Error Report, and Condition/Issue Identification and Reporting/Resolution System processes merged into one process
 - ♦ Causal analysis process improved
 - ♦ Corrective Action Plan development process improved
 - ♦ Performance metrics developed



Quality Assurance Program

(Continued)

– Trending Program

- ♦ Uniform cause codes implemented
- ♦ Reporting frequency quarterly
- ♦ More rigorous process implemented
- ♦ Integrated with Condition Reporting and Causal Analysis processes
- ♦ Condition Reports initiated for adverse trends



YUCCA MOUNTAIN PROJECT

Quality Assurance Program

(Continued)

- **Corrective Action Reports**
 - CAR BSC(0)-03-097 Procedure Implementation - Closed on August 18, 2003
 - CAR BSC-02-C-001 Training and Qualification - Closed on October 17, 2003
 - CAR BSC-01-C-001 Models
 - CAR BSC-01-C-002 Software
 - CAR BSC(B)-03-107 Data - Corrective actions in progress



Quality Assurance Program

(Continued)

- **Performance Indicators**
 - Indicators developed - ongoing process
 - Data available project wide
 - Level 1 Performance Indicators
 - ♦ Quality Assurance Program
 - ♦ Problem Identification and Resolution
 - Level 2 and 3 Performance Indicators
 - ♦ Weighted to feed next level up indicator



YUCCA MOUNTAIN PROJECT

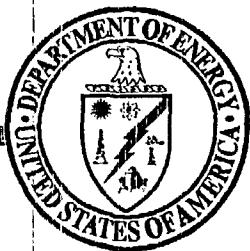
Quality Assurance Program

(Continued)

- **Path Forward**
 - Continued emphasis on
 - ♦ Management involvement
 - ♦ Line ownership
 - Monitor and respond to trends
 - Provide orientation to management on trending
 - Evolve and monitor performance indicators



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U.S. Department of Energy
Office of Civilian Radioactive Waste Management



License Application Status

Presented to:

DOE/NRC Quarterly Management Meeting

Presented by:

Joseph Ziegler

Director, Office of License Application and Strategy

Office of Repository Development

U.S. Department of Energy

November 13, 2003

Las Vegas, Nevada



Topics for Discussion

- **License Application Schedule Status**
- **DOE Feedback on NRC Risk-Ranking of Key Technical Issue Agreements**
- **Key Technical Issue Agreement Status**



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Management Assessment of Progress Towards License Application

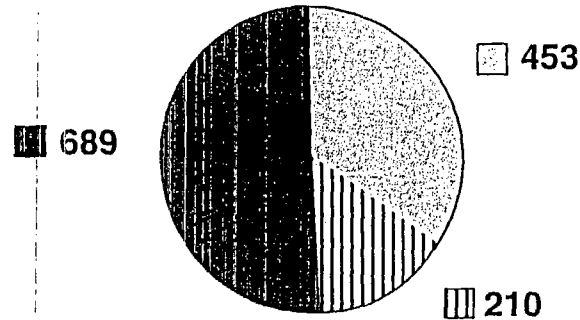
<u>COMPONENT (WEIGHT)</u>	<u>% COMPLETE (6/03)</u>	<u>%COMPLETE (10/03)</u>
• KTI Agreement Closure (10%)	42% (of 190)*	42% (of 190)*
• LA Document (20%)	5%	7%
• Preclosure Safety Assessment (10%)	14%	51%
• TSPA-LA (30%)	35%	63%
• Design (30%)	<u>25%</u>	<u>40%</u>
• TOTAL WEIGHTED % COMPLETE	25%	42%

* Based on assumption that at least 65% (190) of 293 agreements will be considered complete by NRC before LA submittal. All agreements will be addressed with NRC by LA submittal.



Status of License Application Data, Codes, and Models¹

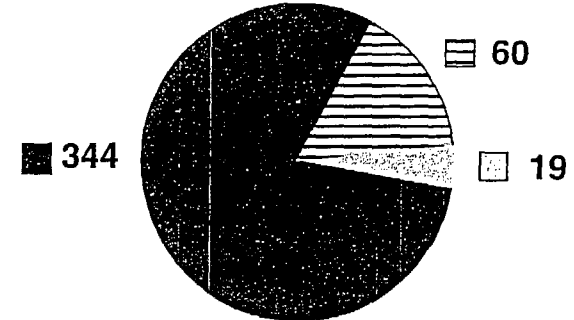
Data (Estimate)



Total Data Sets: 1,352

- Qualified: 689 (51%)
- ▨ Being Verified: 453 (34%)
- ▤ Being Developed: 210 (15%)

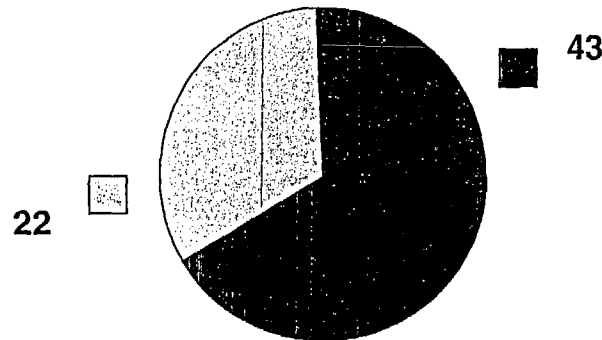
Codes (Estimate)



Total Codes: 423

- ▤ Qualified & Verified: 60 (14%)
- Qualified (Legacy/re-testing): 344 (81%)
- ▨ Developing/verifying: 19 (5%)

Model Reports²



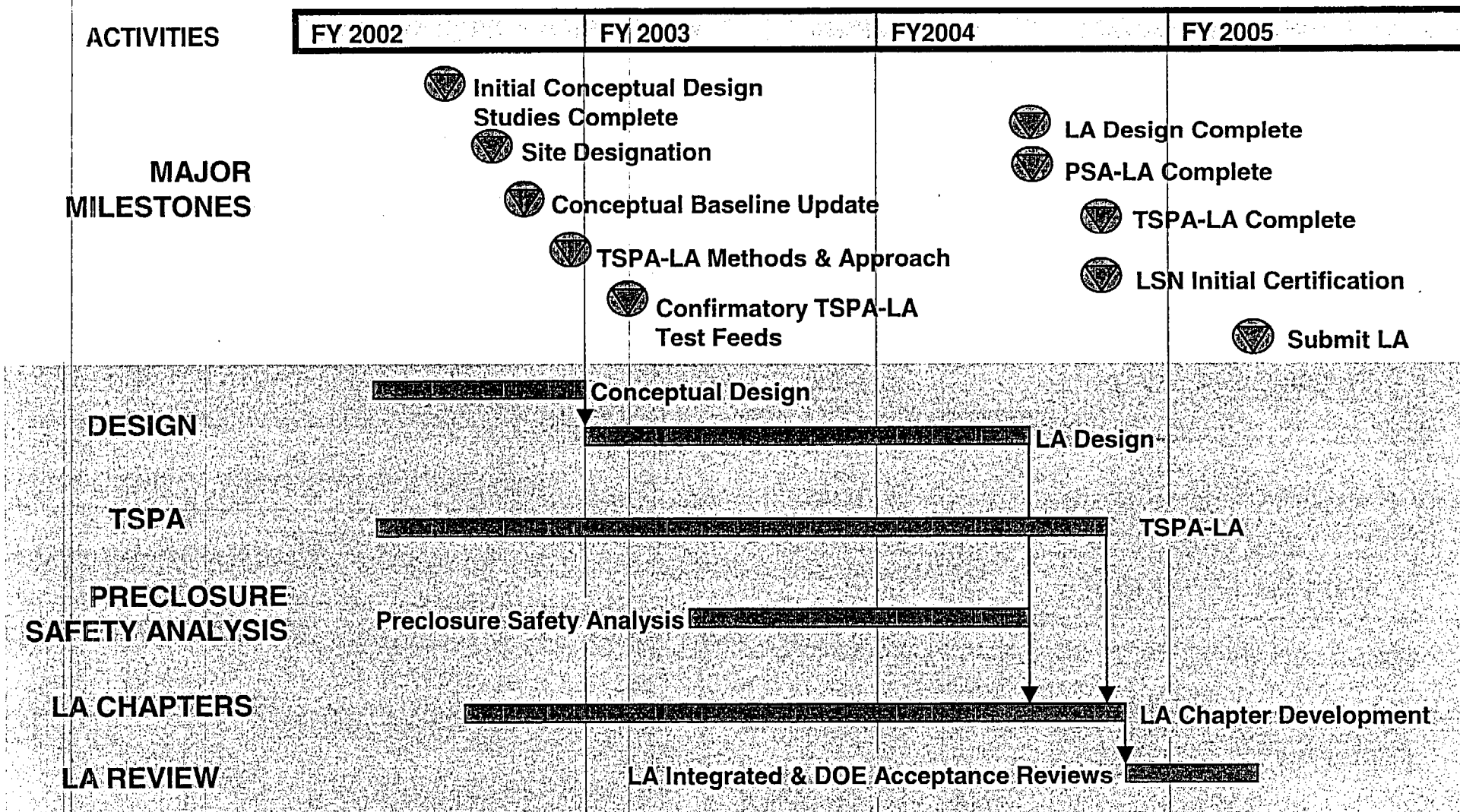
Total Model Reports Directly Supporting LA: 65

- Model Reports Completed: 43 (66%)
- ▨ Being Developed: 22 (34%)

¹Status of qualification activities for LA and completion of reports

²Model Reports may contain multiple models

Summary Schedule to License Application Submittal



U.S. Department of Energy Feedback on U.S. Nuclear Regulatory Commission Risk Ranking

Risk associated with geologic disposal at Yucca Mountain is not high in an absolute sense

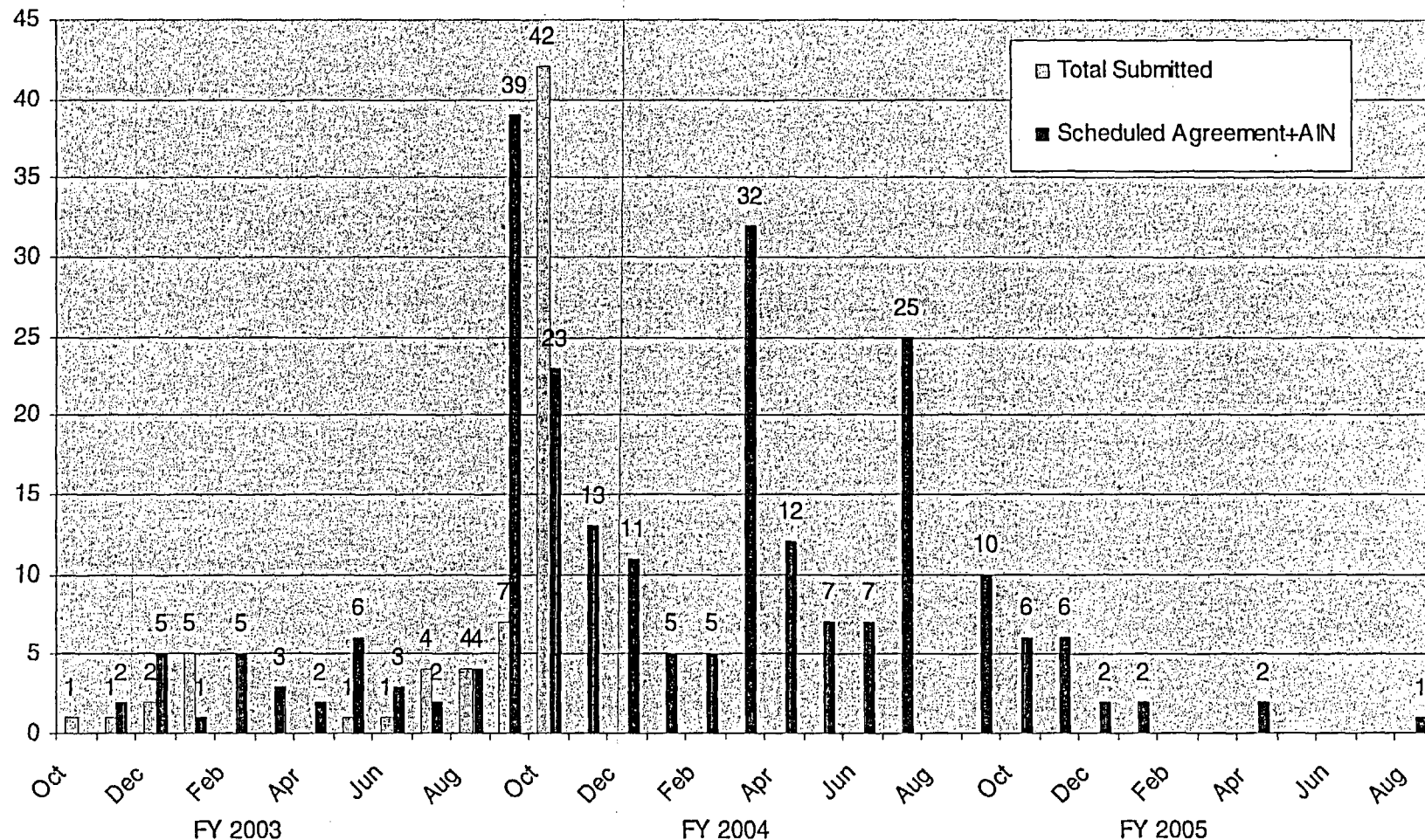
KTl Agreement Subject	NRC Risk Ranking	DOE Relative Risk Ranking
Corrosion of Waste Package and Drip Shield	High	More Significant
Probability of Volcanic Disruption	High	More Significant
Aircraft Crash	High	More Significant
Mechanical Degradation of Waste Package and Drip Shield	High	Less Significant
Effects of In-Package Chemistry on Waste Form Dissolution	High	Less Significant
Radionuclide Transport in Saturated Zone	High	Less Significant
Radionuclide Transport in Volcanic Ash	High	Less Significant



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Scheduled Agreements and Additional Information Need Submittals

Scheduled Agreement+AIN submittals vs. Total Actual



Key Technical Issue Agreement Summary – U.S. Nuclear Regulatory Commission Status

Reflects activity through November 5, 2003

KTID	Agreements Reached	Agreements Submitted to NRC	Responses Submitted In NRC Review	Partial Responses Submitted	NRC Needs Additional Information	Responses Remaining to be Submitted	Agreements Complete
CLST	58	35	2	2	11	23	20
ENFE	41	27	8	5	1	14	13
GEN	1	1	0	1	0	0	0
IA	22	18	3	0	3	4	12
PRE	9	5	2	0	2	4	1
RDTME	23	3	1	2	0	20	0
RT	29	22	17	0	0	7	5
SDS	10	10	2	3	1	0	4
TEF	15	12	1	3	1	3	7
TSPAI	58	32	13	3	9	26	7
USFIC	27	25	13	0	2	2	10
Total =	293	190	62	19	30	103	79

Total responses to be submitted to NRC for closure (remaining responses, partial responses and AIN's) = 152



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